

### **REMARKS/ARGUMENTS**

Applicants would like to thank the Examiner for the careful consideration given the present application.

Claims 1–9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jochheim in view of Maldonado. Claim 1 recites, “a printed circuit board having a plurality of electronic components mounted thereon and having a front surface and a rear surface; a resin housing covering the rear surface of the printed circuit board; a metal housing covering the front surface of the printed circuit board; and an internal antenna disposed on the rear surface of the printed circuit board.”

The Office action cites Jochheim for teaching a printed circuit board at element 7, a resin housing covering the rear surface of the circuit board at element 5 (upper shell 5), and a metal housing covering the front surface of the printed circuit board at element 6 (lower shell 6). The Office action cites Maldonado for teaching an internal antenna disposed on the rear surface of the printed circuit board at column 7, lines 25-28. Applicants believe the Office action to be citing Maldonado’s coupling elements 204a-c for teaching the “internal antenna” of claim 1 (“coupling elements 204a, 204b, and 204c receive retracted helix antenna 204 of portable radiotelephone 200 and couple RF signals to and from antenna 204”).

The Office action asserts that “it would have been obvious...to include Moldanado’s [*sic*] antenna means with Jochheim’s existing radio receiver” based on the rationale that such a combination would improve Maldonado’s antenna coupler and increase RF reception and battery life “as suggested by Maldonado.” This might be true, but the Office action provides no explanation for why this would have been foreseeable to one of ordinary skill in the art at the time the invention was made.

Applicants submit that the combination of Jochheim and Maldonado does not suggest the invention of claim 1. Maldonado's coupling elements 204a-c partially surround a retracted helix antenna 204 of a portable radiotelephone 200 that is placed into housing assembly 300, to "couple RF signals to and from antenna 204" (3:36-39 and figure 1B.) Jochheim teaches a mobile radiotelephone 1 having an antenna 4 that is laterally attached to an upper end face, and which is clearly external to the upper and lower shells 5, 6 (see figure 1). Maldonado's coupling elements 204a-c would only be functional with Jochheim's antenna 4 when partially surrounding the antenna 4, which must occur outside of Jochheim's upper and lower shells, 5, 6 due to the location of Jochheim's antenna 4. One of ordinary skill in the art would have no reason to mount Maldonado's coupling elements 204a-c on Jochheim's printed circuit board 7 and within the upper and lower shells 5, 6, because the coupling elements 204a-c could not possibly partially surround the antenna 4 and couple RF signals to and from the antenna 4 from a position on Jochheim's printed circuit board. If Maldonado and Jochheim are to be properly combined, Maldonado's coupling elements must be outside of Jochheim's upper and lower shells 5, 6 and not disposed on the rear surface of Jochheim's printed circuit board 7. Moreover, Jochheim discloses a radiotelephone and Maldonado discloses a radiotelephone attached to an antenna coupler 100. One skilled in the art, having considered both references, would simply insert the Jochheim radiotelephone into the Maldonado antenna coupler 100 to realize any advantage offered by Maldonado, and not modify Jochheim as asserted in the Office action.

Further, Maldonado is cited for teaching an internal antenna disposed on a rear surface of a printed circuit board. However, Maldonado does not teach an internal antenna disposed on a rear surface of a printed *circuit board having a plurality of electronic components mounted thereon*. Maldonado's board is merely a ground plane and lacks a plurality of electronic

components. Therefore, the combination and Jochheim and Maldonado fails to teach all of the limitations of claim 1.

For the reasons discussed above, applicants submit that claim 1 is not rendered obvious by the combination of Jochheim and Maldonado and that claim 1 is allowable over the combination. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1. Claims 2, 3, 4 and 9 depend from claim 1 and, therefore, are also allowable over the cited combination of references. The arguments provided above are also applicable to claim 5 and dependent claims 6-8. Accordingly, claims 5-8 are allowable over the cited combination of references.

Claims 2 and 6 recite, "wherein the resin housing and the metal housing are joined with each other by a curved line from a viewpoint of the side of the radio terminal device." The Office action cites Jochheim for teaching the noted limitations. However, none of Jochheim's figures nor the specification teach or suggest that the upper and lower shells 5, 6 are joined with each other by *a curved line* from a viewpoint of the side of the radio terminal device. Applicants submit that Jochheim's upper and lower shells 5, 6 would be joined along straight lines from a viewpoint of the side of the radio terminal device. For at least this reason, the rejection of claims 2 and 6 are improper and should be withdrawn.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-32439.

Respectfully submitted,  
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